

**STORING AND RETRIEVING OF FIELD DESCRIPTORS IN JAVA
COMPUTING ENVIRONMENTS**

ABSTRACT OF THE DISCLOSURE

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Improved techniques for storing and retrieving field descriptors in
Java computing environments are disclosed. The techniques can be used
to implement garbage collection for Java programs in a manner that is more
efficient, especially for systems with limited resources (e.g., embedded
10 systems). A reference identifier suitable for use by a Java virtual machine
is disclosed. The reference identifier is associated with a Java object and
can be stored in the internal class representation associated with the Java
object at load time. Moreover, the reference identifier can be used at
runtime to quickly determine whether a field of the associated Java object is
15 a reference to another Java object. As a result, the amount of processing
conventionally performed at runtime is reduced. This, in turn, can improve
the runtime performance of Java virtual machines, especially those
operating with limited resources (e.g., embedded systems).

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